Preliminary DRAFT Cedar River Chinook Population - Tier I - Initial Habitat Project List
Includes Potential Restoration and Protection Projects by Reach
Cedar Middle Reaches 12-18

Reach 12: Cedar River from RM 13.8 to RM 14.3
Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C246	12	7 of 7	new	**Explore whether or not Royal Arch revetment should be removed.**		Comments received since the project identification meeting indicate that Royal Arch is an insignificant source of gravel (according to Cedar River Gravel Study, Perkins	**M**	**M**

Protection

Technical Hypothesis: *Pool habitat and the habitat features that support the creation of pools (lwd, riparian function, and channel connectivity) should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Exist. Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C247	12	6 of 7	Y	new	**Royal Bend:** Protect ~7 parcels, riverfront and floodplain from ~RM 14.3 to RM 14.7 (also in Reach 13).			**H/M**	**H**

Reach 13: Cedar River from RM 14.3 to RM 15.0
Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C248	12	6 of 7	7i	**Dorre Don Side-Channel Enhancements:** Also in Reach 14. Enhance protected side channels as needed.			**M**	**M**

Protection

Technical Hypothesis: *Pool habitat and the habitat features that support the creation of pools (lwd, riparian function, and channel connectivity) should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasibil. H, M, L
C249	13	7 of 7	Y	new	**Protect existing riparian forest and side channel on right bank** at ~RM 14.1. Is part of Cedar River Legacy Royal Bend Reach described in Reach 12.			**H/M**	**H**
C250	13	7 of 7	Y	4d, 4f	**Protect existing riparian forest and side channel on left bank** at ~RM 15. Is part of Cedar River Legacy Dorre Don Reach described in Reach 14.			**H/M**	**H**

Reach 14: Cedar River from RM 15.0 to RR Trail Crossing at RM 16.0

Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasibil. H, M, L
C251	14	1 of 7	7i	**Dorre Don Area Side Channel Enhancements:** Enhance protected side channels as needed. Related to C250 and C253.	>$250,000 and <$500,000	There is a high potential avulsion hazard in Reach 14.	**M**	**M**
C252	14	1 of 7	8j	**Dorre Don Area Flood Buyouts:** Acquire developed properties in lower Dorre Don area and modify levees and restore floodplain where feasible.	>$5,000,000 and <$15,000,000	There is a high potential avulsion hazard in Reach 14. The feasibility of completing all the targeted buyouts is low, however the feasibility of completing some of the buyouts is M or H. Flood buyouts alone generally do not provide significant fish benefit, but are a first step to allow for future floodplain restoration. For greatest benefit, flood buyouts should be pursued in concert with a comprehensive habitat restoration effort.	**H/M**	**L**

Protection (Area of high spawning and egg incubation)

Technical Hypothesis: *Riparian function, lwd and channel connectivity should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C253	14	5 of 7	Y	4d, 4f	**Dorre Don Meanders Reach:** Protect 71 acres, 14 parcels, rural residential, riverfront with flooding issues. Includes an extensive floodplain riparian forest, numerous valley floor spring-fed features including side channel, stream, and oxbow habitats.	>$2,000,000 and <$5,000,000	This is also a good area to work with private property owners to protect habitat on their property, especially on left bank. There is a high potential avulsion hazard in Reach 14. The Cedar River Legacy Dorre Don Meanders Reach spans EDT reach 14 and 15.	**H/M**	**H**

Reach 15: Cedar River from RR Trail Crossing at RM 16.0 to RR Trail Crossing at RM 17.0

Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C254	15	2 of 7	new	**Orchard Grove Buyouts:** Pursue flood buyouts in the Orchard Grove and restore floodplain where possible.		The feasibility of completing all the targeted buyouts is low, however the feasibility of completing some of the buyouts is M or H. Flood buyouts alone generally do not provide significant fish benefit, but are a first step to allow for future floodplain restoration. For greatest benefit, flood buyouts should be pursued in concert with a comprehensive habitat restoration effort.	**M**	**L**

Protection (Area of high spawning and egg incubation)

Technical Hypothesis: *Riparian function, lwd and channel connectivity should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C255	15	4 of 7	N	new	**Protect Left Bank:** Explore protection of left bank forested floodplain area adjacent and upriver of property already in King County ownership in this reach.		Area is very close to City of Maple Valley incorporated area. Development has occurred in area since aerial photo that was used in for project identification meeting. There still is forested riparian floodplain to be protected.	**H/M**	**M**

Reach 16: Cedar River from RR Trail Crossing at RM 17 to Arcadia (RM 19.0)

Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasibil. H, M, L
C256	16	5 of 7	new	**If floodplain area on left bank, downstream of "BN Nose" property is protected**, explore restoration opportunities.		More information needed before project can be evaluated.	**?**	**?**

Protection (Area of highest spawning and egg incubation in Cedar-Rural)

Technical Hypothesis: *Riparian function, lwd and channel connectivity should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasibil. H, M, L
C257	16	1 of 7	N	new	**Consider protecting floodplain area on left bank**, downstream of "BN Nose" property and upstream of Orchard Grove revetment.		More information needed before project can be evaluated.	**?**	**?**
C258	16	1 of 7	N	new	**Consider protecting gravel recruitment area and unstable slopes on the right bank,** at the downstream end of Reach 16 and upstream of the Cedar River trail bridge.		Comments received since meeting indicating that this slope is not a source of gravel (per Cedar River Gravel Study, Perkins '02). Extremely unstable slopes crossed by a private road reduce the benefits and feasibility of this project. Proposal should probably be removed from list.	**M/L**	**L**

Reach 17: Cedar River from Arcadia (RM 19.0) to RR Trail Crossing at RM 19.6

Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasibil. H, M, L
C259	17	4 of 7	new	**Enhance Wingert Side:** Channel on left bank, upper end of reach.		Property is in King County ownership.	**M**	**H**

Protection (Supports spawning and egg incubation downstream)

Technical Hypothesis: *Riparian function, lwd and channel connectivity should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasibil. H, M, L
	17	2 of 7			No projects identified at this time.				

Reach 18: Cedar River from RR Trail Crossing at RM 19.6 to Landsburg Dam (RM 21.7)

Restoration

Technical Hypothesis: *Reduce channel confinement, increase pools, large woody debris, and riparian function.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C260	18	3 of 7	9	**Explore feasibility of passing large woody debris over Landsburg Dam.**		Currently about 10 pieces per year are removed from the river in the vicinity of Landsburg Dam to avoid damage to the dam. With the gate modifications at the dam, some wood will pass naturally through the structure. Active passage of wood is uncertain due to legal liability associated with public safety issues and operational ability to move large pieces of wood from upstream to downstream of the dam. Seattle Public Utilities is investigating a project to install a floodway at Landsburg Dam to pass flood flows and wood during high flows. There is disagreement about the benefits to Chinook of this project. Seattle Public Utilities staff would rate Benefits to Chinook as M/L and Feasibility as uncertain.	**H**	**M/L**
C261	18	3 of 7	7e	**Reconnection of Wetland 69:** Reconnect wetland 69 (oxbow) to river. Additional acquisition would be needed.	>$500,000 and <$1,000,000	Concerns raised about proposal hurting other terrestrial and aquatic species such as Western Toad. Also concerns about water levels in pond vs. the river. Project will require an engineered fix and is likely to be costly.	**M/L**	**L**
C262	18	3 of 7	new	**Explore whether or not revetments at river mile 20.2 and 20.6 still exist.** If they do, consider removing them.		Comments received since the meeting indicate that revetment at river mile 20.2 no longer exists as anything other than an old, slightly raised eroding prism of native channel material (so no need to do anything with it but let the river continue to erode it). The revetment at 20.6 still exists. Removal would be problematic because it protects the regional Cedar River Trail.	**L**	**M**

Protection (Supports spawning and egg incubation downstream)

Technical Hypothesis: *Riparian function, lwd and channel connectivity should be maintained.*

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasibil. H, M, L
C263	18	3 of 7	Y	4c	**Landsburg Reach:** 87 acres, rural residential, riverfront including forested floodplain and areas of unarmored, steep bank.	>$2,000,000 and <$5,000,000	In particular, protect gravel recruitment source on left bank in downstream portion of Reach 18.	**H**	**H**